

CLAIMS

What is claimed is:

1. A cursor simulator installed in a main system, the main system comprising a display device having a predetermined display frame for displaying a cursor, the main system being connected to an optical reading device, the optical reading device having a predetermined view scope, wherein when the optical reading device receives a plurality of first optical signals and a plurality of second optical signals or only receives a plurality of second optical signals, the optical reading device transmits the first and second optical signals to the main system, and the main system transmits the first and second optical signals to the cursor simulator, the cursor simulator comprising:
 - a receiving module for receiving the first and second optical signals;
 - a position corresponding module for corresponding the view scope of the optical reading device to the display frame of the display device so as to make each position in the view scope correspond to a position on the display frame;
 - a display module for detecting the position on the display frame corresponding to the position of the first or the second optical signal in the view scope and displaying the first or the second optical signal on a simulation display frame, wherein the simulation display frame comprises a plurality of optical signal display positions, and each optical signal display position corresponds to a specific position on the display frame;
 - a wavelength parameter acquiring module for acquiring the wavelength parameter of the first optical signal according to a first color parameter of the optical signal display position before displaying the first optical signal and a second color parameter after displaying the first optical signal; and

a positioning module for reading the color parameter of each of the optical signal display positions on the simulation display frame, wherein when the color parameter is approximately equal to the wavelength parameter, the positioning module will record the optical signal display position, and then generate a cursor simulating position according to the recorded optical signal display positions.

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2. The cursor simulator of claim 1, further comprising a floating parameter acquiring module for acquiring a floating parameter according to the different color parameters of the second optical signals displayed on the simulation display frame at different times, wherein the color parameter is approximately equal to the wavelength parameter when the difference between the color parameter and the wavelength parameter is less than or equal to the floating parameter.

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3. The cursor simulator of claim 1, further comprising a switching module for switching the cursor simulator between a command mode and a movement mode, the switching module comprising:

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a first detecting module for detecting whether the cursor simulating position is equal to a first position in a specific period, wherein if yes, a first switching signal for switching the cursor simulator to the command mode is generated; and a second detecting module for detecting whether the cursor simulating position is equal to a second position in a specific period, wherein if yes, a second switching signal for switching the cursor simulator to the movement mode is generated.

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4. The cursor simulator of claim 3, wherein when the cursor simulator is in the movement mode, the cursor simulating position generated by the positioning module of the cursor simulator is displayed on the position of the cursor on the display frame, and when the cursor simulator is in the command mode, the positioning module records all generated cursor simulating positions, and then generates a command code according to the cursor simulating positions.

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5. The cursor simulator of claim 4, further comprising a commanding module having a command table, the command table comprising a plurality of commands and a plurality of command codes, and each of the commands corresponding to a command code, wherein the commanding module finds the command corresponding to the command code generated by the positioning module so that the cursor simulator generates and sends out the command.
10. The cursor simulator of claim 1, wherein the position corresponding module automatically corresponds the view scope of the optical reading device to the display frame of the display device so that each position in the view scope corresponds to a position on the display frame.
15. The cursor simulator of claim 1, wherein a user uses the position corresponding module by a manual method to correspond the view scope of the optical reading device to the display frame of the display device so that each position in the view scope corresponds to a position on the display frame.
20. The cursor simulator of claim 1, wherein a user uses the position corresponding module by an automatic method to correspond the view scope of the optical reading device to the display frame of the display device so that each position in the view scope corresponds to a position on the display frame.
25. A cursor simulating method applied in a main system, the main system comprising a display device having a predetermined display frame for displaying a cursor, and a cursor simulator for executing the cursor simulating method, the main system being connected to an optical reading device having a predetermined view scope, wherein when the optical reading device receives a plurality of first optical signals and a plurality of second optical signals or only receives a plurality of second optical signals, the optical reading device transmits the first and second optical signals to the main system, and the cursor simulator of the main system

executes the cursor simulating method, the method comprising:

- a position corresponding step for corresponding the view scope of the optical reading device to the display frame of the display device so as to make each position in the view scope correspond to a position on the display frame;
- 5 a displaying step for detecting the position on the display frame corresponding to a position of the first or the second optical signal in the view scope and displaying the first or the second optical signal on a simulation display frame, wherein the simulation display frame comprises a plurality of optical signal display positions, and each optical signal display position corresponds to a specific position on the display frame;
- 10 a wavelength parameter acquiring step for acquiring the wavelength parameter of the first optical signal according to a first color parameter of the optical signal display position before displaying the first optical signal and a second color parameter after displaying the first optical signal; and
- 15 a positioning step for reading the color parameter of each optical signal display position on the simulation display frame, wherein when the color parameter is approximately equal to the wavelength parameter, the positioning module records the optical signal display position, and then generates a cursor simulating position according to the recorded optical signal display positions.

20 10. The cursor simulating method of claim 9, further comprising a floating parameter acquiring step for acquiring a floating parameter according to the different color parameters of the second optical signals displayed on the simulation display frame at different times, wherein the color parameter is approximately equal to the wavelength parameter when the difference between the color parameter and the wavelength parameter is less than or equal to the floating parameter.

25 11. The cursor simulating method of claim 9, further comprising a switching step for

switching the cursor simulator between a command mode and a movement mode, wherein the switching step comprises:

a first detecting step for detecting whether the cursor simulating position is equal to a first position in a specific period, wherein if yes, a first switching signal for switching the cursor simulator to the command mode is generated; and
5 a second detecting step for detecting whether the cursor simulating position being equal to a second position in a specific period, wherein if yes, a second switching signal for switching the cursor simulator to the movement mode is generated.

12. The cursor simulator of claim 11, wherein when the cursor simulator is in the movement mode, the cursor simulating position generated by the cursor simulator in the positioning step is displayed on the position of the cursor on the display frame, and when the cursor simulator is in the command mode, in the positioning step, the cursor simulator records all generated cursor simulating positions, and then generates a command code according to the cursor simulating positions.

15 13. The cursor simulating method of claim 12, wherein the cursor simulator has a command table comprising a plurality of commands and a plurality of command codes, and each command corresponds to a command code, wherein the cursor simulator uses command table to detect the command corresponding to the command code generated in the positioning step so as to generate and send out the command.

20 14. The cursor simulating method of claim 9, wherein in the position corresponding step, the cursor simulator automatically corresponds the view scope of the optical reading device to the display frame of the display device so that each position in the view scope corresponds to a position on the display frame.

25 15. The cursor simulating method of claim 9, wherein a user operate the cursor simulator by a manual method to perform the position corresponding step so as to

correspond the view scope of the optical reading device to the display frame of the display device so that each position in the view scope corresponds to a position on the display frame.

16. The cursor simulating method of claim 9, wherein a user operates the cursor simulator by an automatic method to perform the position corresponding step so as to correspond the view scope of the optical reading device to the display frame of the display device so that each position in the view scope corresponds to a position on the display frame.

5 17. A cursor simulation device, comprising:

10 a main system having a control program installed therein;
a projector;
a laser pointer pen; and
a camera embedded in the projector;

15 wherein the user uses the laser pointer pen to emit a laser beam, the camera embedded in the projector receive the laser beam, and then the laser beam signal is transformed into a digital signal to be transmitted to the control program in the main system for processing.

18. The cursor simulation device of claim 17, wherein the projector, the laser pointer pen and the camera are common products on the market.

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